



National Evaluation of Hospital Perinatal Hepatitis B Prevention Policies and Practices

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2006 National Evaluation of Hospital Perinatal Hepatitis B Policies and Practices



Objectives

- ✦ Baseline evaluation to be repeated in 3-5 years
- ✦ Evaluate maternal HBsAg screening and newborn hepatitis B vaccination policies and practices in US delivery hospitals
- ✦ Evaluate factors associated with lack of screening and vaccination
- ✦ Brief look at perinatal HIV policies and practices

Evaluation Design

- ◆ Eligibility Criteria – 2003 AHA (American Hospital Association) birthing hospitals with ≥ 100 annual births ($n=3,102$)
- ◆ Stratified random sample – 51 strata (50 states + one stratum containing 5 territories + DC)
- ◆ Sample was proportional to stratum size

Methodology

- ✦ March 2006 hospital policy survey mailed to clinical nurse managers (n=242)
- ✦ Hospitals given abstraction form to review 25 paired maternal and infant medical records for infants born on or after Oct 1, 2005
- ✦ 43 perinatal hepatitis B coordinators volunteered to facilitate the evaluation in their jurisdictions

Data Collection & Analysis

- ◆ Response Rate:
 - Policy Survey: $196/242 = 81\%$
 - Medical Record: $191/242 = 80\%$
- ◆ 46/53 states/territories had >50% response rate
 - 2 low responders were states with known high numbers of HBsAg positive pregnant women & historically low birth dose coverage
- ◆ Descriptive and weighted univariate analysis – SAS v9.1 & SUDAAN v9

RESULTS



Hospital Characteristics

- ◆ Annual live births (≥ 100): mean=1336; min=80 max=9465; median=689
- ◆ Highest Level of neonatal care: n (%)
 - Basic 88 (47)
 - Specialty 56 (30)
 - Neonatal Intensive Care 41 (22)
- ◆ Type of Attending Provider:
 - Obstetrician 3536 (84)
 - Family practitioner 778 (7)
 - Other/Unknown 436 (10)

Hospital Policy Survey Results (Hepatitis B & HIV)



Hospital Reported Policies & Standing Orders (n=196)

Question	Missing	Yes	
		n	%
Policy to review prenatal HBsAg results at time of admission to L&D	3	130	70
Standing Orders to review prenatal HBsAg results at time of admission to L&D	32	77	50
Policy for HBsAg testing ASAP after admit for women without documented HBsAg result	1	116	62
Standing Orders for HBsAg testing ASAP after admit for women without documented HBsAg result	47	77	55
Policy for repeat testing for pregnant, HBsAg negative women at risk for HBV during pregnancy	7	20	11

Hospital Reported Policies & Standing Orders cont'd

Question	Missing	Yes	
		n	%
Policy for administration of HepB within 12 hrs of birth for infants born to HBsAg + mothers	2	148	80
Standing Orders for administration of HepB within 12 hrs of birth for infants born to HBsAg + mothers	16	118	69
Policy to routinely administer HepB to all newborns before hospital discharge	1	121	65
Standing Orders to routinely administer HepB to all newborns before hospital discharge	30	126	81
Hospital receives HepB at no cost from state or local health department for infants born to HBsAg + mothers	29	82	44

Relationship of State HBsAg Screening Laws to Hospital Policy

* 24 states have prenatal HBsAg screening laws

	**n	Policy for HBsAg testing ASAP after admit for women without documented HBsAg result (%)	p-value
Screening laws			
Yes	100	69%	0.9
No	84	56%	
		Policy for repeat testing for pregnant, HBsAg negative women at risk for HBV during pregnancy (%)	
Screening laws			
Yes	99	18%	0.0035*
No	79	4%	

* $p < 0.05$

** totals vary due to missing data

Relationship of Receipt of HepB at No Cost to Hospital Policy

	**n	Policy to routinely administer hepatitis B to all newborns before discharge (%)	p-value
HepB at no cost			
Yes	81	74%	0.0078*
No	74	54%	
		Standing orders to routinely administer HepB to all newborns before discharge (%)	
HepB at no cost			
Yes	73	86%	0.18
No	59	77%	

* $p < 0.05$ **totals vary due to missing data

HIV Policies and Standing Orders (n=196)

Question	Missing	Yes	
		n	%
Policy to review prenatal HIV results at time of admission	2	101	52
Standing Orders to review prenatal HIV results at time of admission	66	50	38
Policy for HIV testing ASAP after admit for women without documented HIV result	3	67	35
Standing Orders for HIV testing ASAP after admit for women without documented HIV result	66	54	42
Policy for administration of neonatal HIV prophylaxis to infants born to HIV positive mothers	5	62	32

Maternal Medical Record Review Results



Maternal Race/Ethnicity, n=4,853

	Mothers (n)	%, weighted
Race		
White	3265	60.8
African American	610	16.0
Asian	138	3.9
AI/AN	88	1.1
Native Hawaiian or other PI	18	0.1
Other or Unknown	734	18.2
Ethnicity		
Hispanic or Latino	679	18.4
Not Hispanic or Latino	2747	51.2
Unknown	1427	30.4

Maternal Insurance Status, n=4,853

	Mothers (n)	%, weighted
Private	2332	52.3
Medicaid	2085	38.4
Other or Unknown	333	9.3
Missing	103	

Prenatal HBsAg vs. HIV Testing, n=4,853

	HBsAg n (%)	HIV n (%)
Prenatal testing before admit for delivery		
Yes	4495 (93)	3498 (72)
No	194 (5)	1051 (22)
Not documented	118 (3)	304 (6)
Prenatal test results (HBsAg only)		
Positive	18 (1)	n/a
Negative	4492 (98)	n/a
Not documented	60 (1)	n/a

Documentation of Prenatal HBsAg Test Result

	Mothers (n)	%, weighted
Copy of lab report	639	10.7
Clinical transcription	3126	77.4
Other*	593	11.9
Missing	152	

* progress notes, copies of prenatal record without hardcopies of lab report

HBsAg vs. HIV Testing on Admission, n=4,853

	HBsAg n (%)	HIV n (%)
Testing on admission		
Yes	460 (10)	403 (8)
No	4246 (88)	4225 (87)
Not documented	147 (3)	225 (5)
Admission test results (HBsAg only)		
Positive	3 (1)	n/a
Negative	451 (9)	n/a
Not documented	4399 (91)	n/a

Infant Medical Record Review Results



Infant Medical Record Characteristics, n=4,853

Infant Characteristics	**Infants (n)	%, weighted
Infant <2000 grams at birth		
Yes	398	8.1
No	4406	91.7
Not documented	3	0.1
Recorded maternal HBsAg test result in infant record		
Yes	4000	91.0
No	740	8.3
Not documented	46	0.7
Maternal HBsAg test result		
Positive	18	0.7
Negative	3961	99.4

**totals vary due to missing data

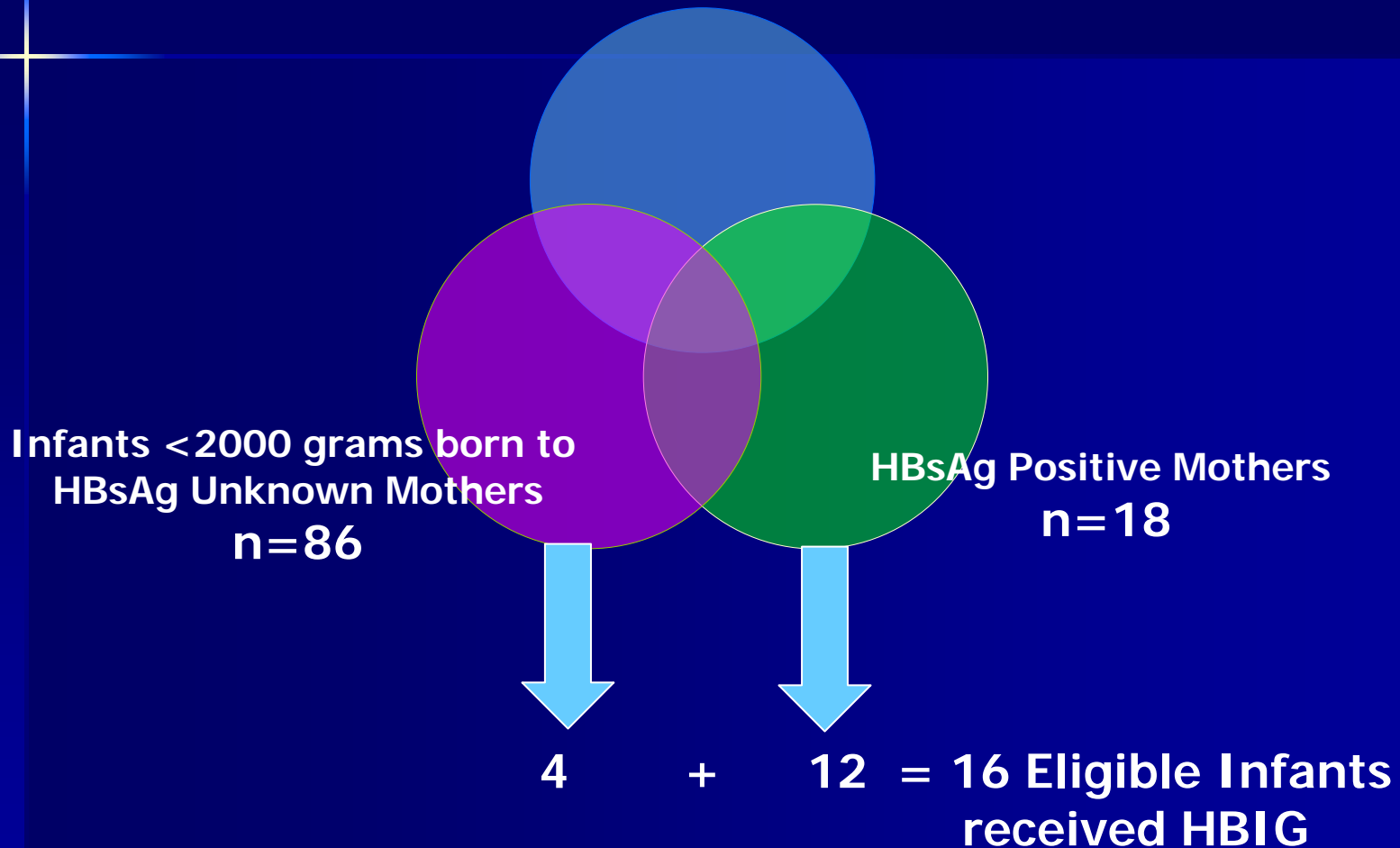
Infant Vaccination, n=4,853



	# of Infants	%, weighted
Hepatitis B vaccine given to infant		
Yes	3459	71.2
No	1255	28.8
Missing	139	
Hep B given:		
By standing orders	3065/3459	88.8
By specific MD order	427/3459	11.2
If Hep B not given:		
Specific order not to vaccinate	99/1255	7.9

HBIG Administration, n=39

Infants eligible for HBIG
n=104



Total HBIG Administered = 39

Factors associated with HBsAg Screening Rate Prior to Admission

	**n	% screened prior to admission (\pm 95%CI)
State Screening laws		
Yes	2428	96.1 (1.0)
No	2103	94.6 (1.7)
Policy to review prenatal HBsAg results on admission		
Yes	3140	95.0 (1.2)
No	1341	96.2 (1.6)
Std orders to review prenatal HBsAg results on admission		
Yes	1869	94.9 (1.6)
No	1839	95.3 (1.5)

**totals vary due to missing data

Factors associated with Rate of HepB Administration

	**n	% HepB Birth dose (\pm 95%CI)
Maternal HBsAg result in neonatal medical record		
Yes	4000	70.9 (1.4)
No	740	67.3 (5.5)
HepB vaccine at no cost		
Yes	2096	*84.5 (1.9)
No	1767	54.4 (1.9)
Policy to routinely administer HepB to all newborns before discharge		
Yes	2992	*89.2 (1.4)
No	1534	41.9 (2.5)

* p<0.05

**totals vary due to missing data

Factors associated with Rate of HepB Administration cont'd

	**n	% HepB Birth dose (\pm 95%CI)
Standing orders to routinely administer HepB to all newborns before discharge		
Yes	3124	*88.3 (1.5)
No	685	51.6 (2.7)
The highest level of neonatal care		
Basic	2158	74.4 (1.1)
Specialty	1423	*66.9 (1.7)
Neonatal intensive care	944	71.9 (2.4)
None	24	100

* $p < 0.05$

**totals vary due to missing data

Factors associated with Rate of HepB Administration cont'd

	**n	% HepB Birth dose (\pm 95%CI)
Number of live births		
<350	1148	*77.4 (1.6)
350-699	1184	*75.9 (1.7)
700-2000	1075	*79.2 (1.5)
\geq 2000	1142	66.1 (2.0)

* $p < 0.05$

** totals vary due to missing data

Limitations

- ◆ Respondent bias
- ◆ Record review bias – health dept vs. hospital personnel
- ◆ Data quality issues (missing prenatal test dates)
- ◆ Skip patterns caused erroneous responses

Summary

- ◆ Only 71% of infants received hepatitis B vaccine birth dose
- ◆ Only 11% of HBsAg test results were documented by copy of laboratory report
- ◆ HBIG was not administered to all eligible infants based on CDC recommendation
- ◆ High rate of HBsAg prenatal testing indicates integration into prenatal care
- ◆ Factors associated with hepatitis B vaccine administration in univariate analysis:
 - Receipt of hepatitis B vaccine at no cost; policies & standing orders in place to routinely vaccinate infants prior to discharge; hospital size

Next Steps



- ◆ Disseminate feedback and recommendations to hospitals
- ◆ Communicate findings to HIV colleagues
- ◆ Manuscript preparation

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